

## **Sectoral and Cross-Sectoral Strategy For the National Climate Assessment**

The Global Change Research Act requires that the National Climate Assessment (NCA) analyze the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity. This strategy sets out a path for the successful completion of this requirement in the context of a broad vision for a sustained, integrated approach to the NCA.

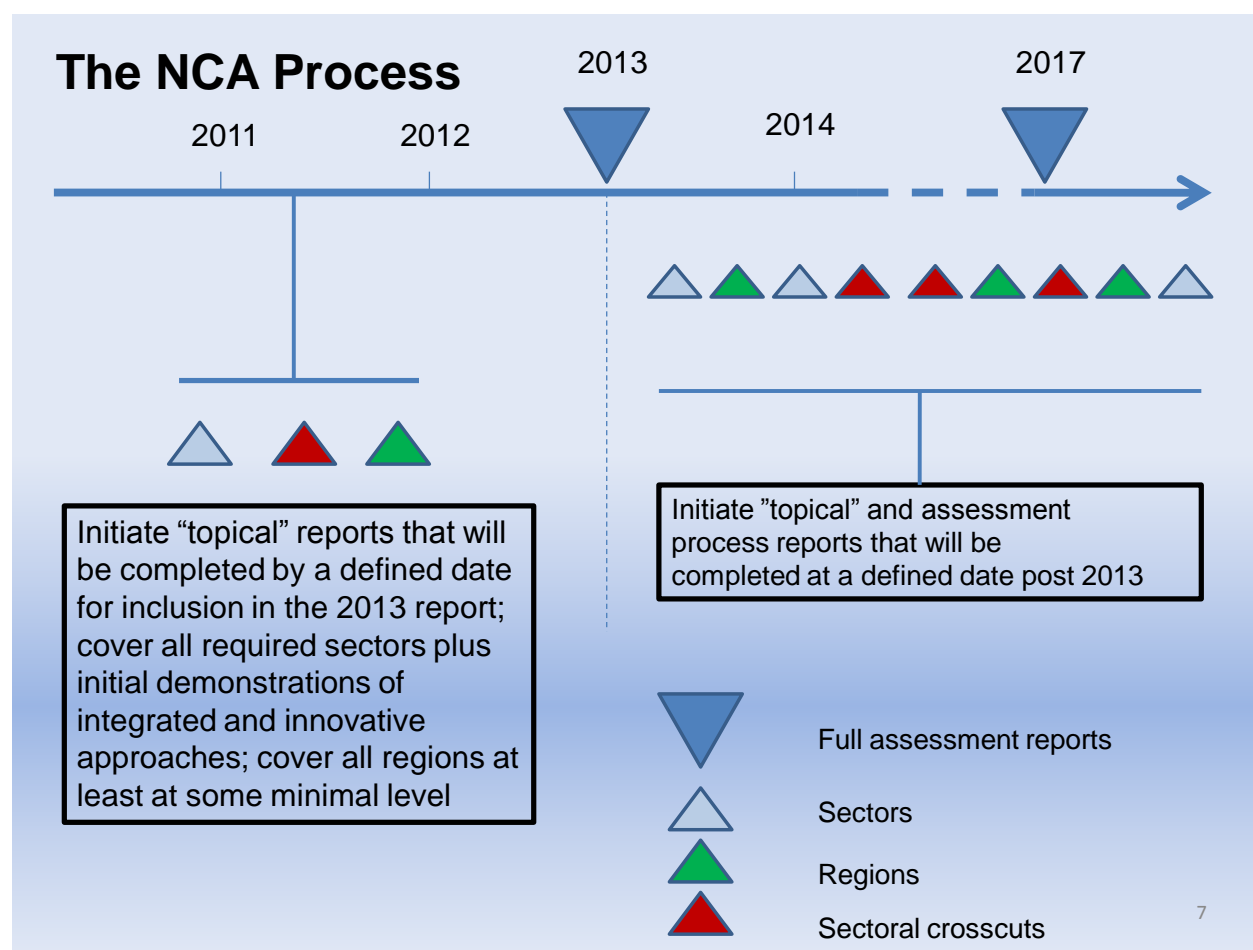
The National Climate Assessment Development Advisory Committee (NCADAC) will be the primary authors of the assessment, both for the 2013 report, and for the sustained assessment process. Members of the NCADAC will participate in working groups focused on the development of chapters related to sectors and the sectoral and geographical crosscuts and other topics. NCA reports will be based on technical reports prepared based on best available science and information.

The Federal agencies will support the assessment by preparing technical reports, sponsoring workshops and providing other information. In addition, the NCADAC and the United States Global Change Research Program (USGCRP) recognize and seek to leverage the important and growing distributed science capabilities and core competencies across the US. The NCA will draw upon the expertise within state and local governments, non-governmental organizations, impacted communities, professional societies, and private industry. These sources represent currently untapped assets and diverse scientific and technical information, especially as they relate to the value of climate and global change information for decision making. A process has been established to seek and receive relevant information from outside sources through “Requests for Information” (see Appendix B).

Managing and reconciling across numerous viewpoints will not be easy, but ultimately will result in future NCA reports that are better informed and more useful for decision makers inside and outside of federal government. A critical piece of this vision is creating an institutional structure where all federal programs contributing to the assessment are connected to a variety of sectoral interests, key decision-makers, and sources of information - preferably through existing networks. To the extent that such networks do not currently exist, the NCA should foster their development.

## Approach:

The baseline approach for the 2013 report is to provide updates to the 2009 *Global Climate Change Impacts* report, but the intent is also to accomplish at least some demonstrable progress towards the longer-term, more visionary set of Assessment objectives and outcomes articulated in the NCA Strategy (see Appendix A). The sustained NCA process will provide for ongoing submission of ‘topical reports’ that feed into both an online, web-based presence and the quadrennial reports (Figure 1). These topical reports may address individual sectors or regions or examine issues that look at the combined interests or impacts that cut across a number of sectors or regions. Material related to one of the sectors or crosscutting topics that is not available in time for the 2013 report may become part of subsequent publications.



**Figure 1. A possible phasing of the continuous assessment process**

NOTE: Topical products are “official” products of the NCA, while technical inputs are part of the foundational reference pool, but are not published by the NCA (although they may be “published” by USGCRP agencies, academia, NGOs, etc.). The topical products will be subject to a higher level of review, as they are considered pieces of the assessment and need to meet the requirements of the Information Quality Act for “Highly Influential Documents”.

The first step of this strategy is to identify expertise within the NCADAC, the federal agencies, and other public and private groups related to each sector and crosscutting topic. The NCADAC has created a working group on Sector Coordination and has assigned members to work on various individual sector teams.

The NCADAC has identified the key topics to be considered in the National Climate Assessment as:

**Suggested Sectoral Issues**

Water Resources  
Energy Supply and Use  
Transportation  
Agriculture  
Forestry  
Ecosystems and Biodiversity  
Human Health

**Suggested Sectoral Cross-Cuts**

Water/Energy/Land Use (including agriculture, forestry)  
Urban/Infrastructure/Vulnerability\*  
Impacts of climate change on Tribal/Indigenous and Native Lands, and Resources\*  
Land Use/Land Cover change (approached as an integrated topic, e.g. how land use decisions of all kinds increase or decrease adaptation and mitigation)\*\*  
Rural Communities, Agriculture, and Development\*  
Impacts on biogeochemical cycles, with implications for ecosystems and biodiversity

**Suggested Geographical Cross-Cuts**

Coastal zone, development, and ecosystems (case studies: SF Bay Delta, Chesapeake Bay, and Gulf Coast)  
Watersheds (case studies: Great Lakes, Colorado River, Columbia River – all include an international component) [The Mississippi River and additional basins may be added as resources and interests are identified.]  
Oceans and Marine Resources (includes Ocean Acidification)

\* part of required human social systems sector

\*\* part of required land resources sector

***Possible additions (past 2013)***

*Migratory Species*

*Arid/Semi-Arid Areas*

*High Elevation Areas*

*Arctic Issues (separate from Alaska/Arctic region chapter)*

*Environmental Justice*

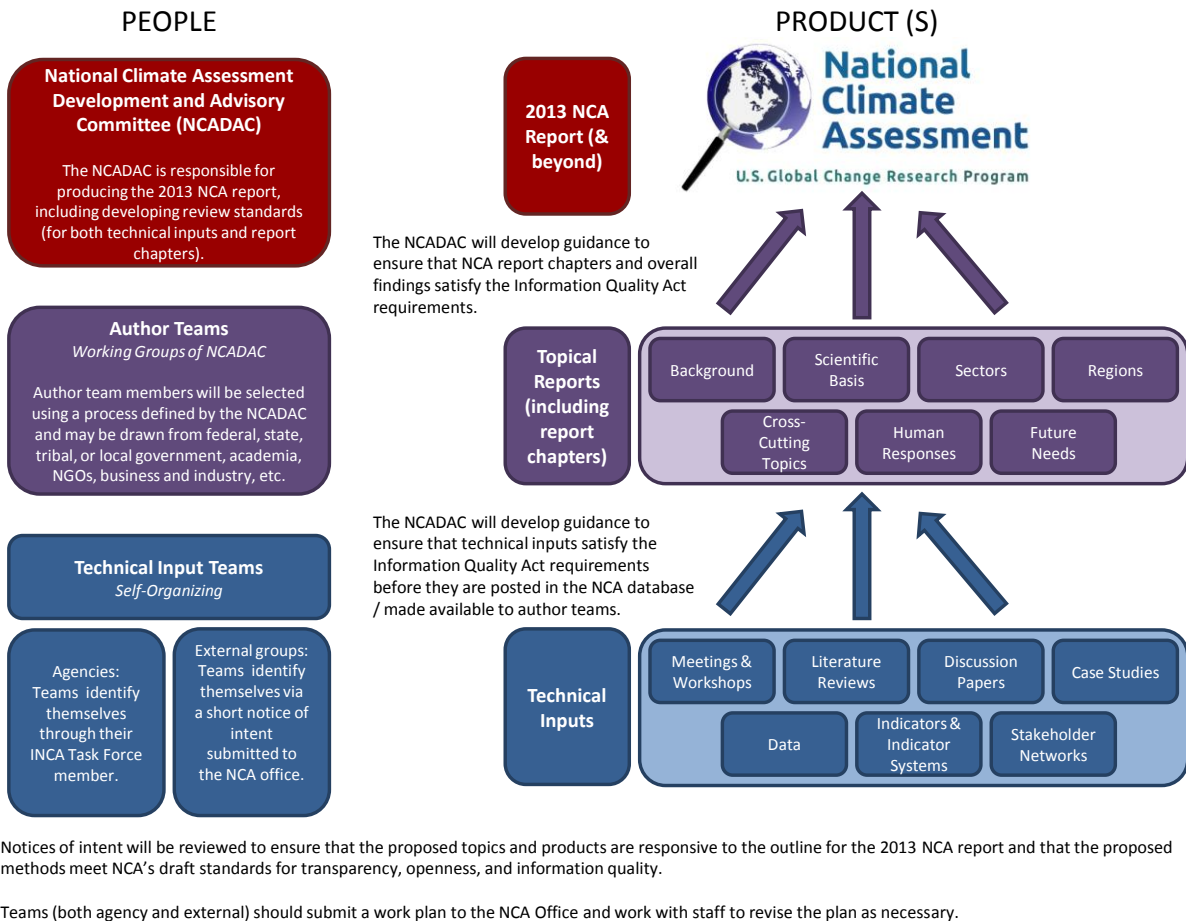
*Trade, Food, and Water Security*

*Extreme Events*

*Missouri River Basin*

*Expanded Regional Assessments*

The NCADAC Executive Secretariat will set policy, coordinate sectoral efforts, and encourage interaction with similar NCADAC working groups responsible for other aspects of the NCA report to ensure fertilization of ideas and harmonization of efforts while minimizing duplication. Coordination with regional efforts is especially important, as some sectors will need to be considered regionally, and some regions will have specific needs to examine critical sectors. The NCA office will play a key role in coordinating across NCADAC and federal agency efforts. Once progress has been initiated towards satisfying the needs of the 2013 report, additional effort should begin to build on the current capacity to adaptively create a more comprehensive NCA approach in the future.



**Figure 2: Flow chart of Inputs and Products**

## Identify sectoral capacity, inventory existing reports, documents and resources, and identify potential authors for technical reports

The NCADAC will use the 2009 Assessment report as the base from which to highlight new knowledge and activities related to climate change since 2009 that can be articulated through and implemented within an adaptive risk/vulnerability framework. This risk-based framework will set the priorities for the 2013 report, as well as the topical reports. Issues selected for emphasis should illustrate integrated and innovative approaches to climate issues. Subsequent topical reports could feed into the ongoing future NCA process to best align with topical reports that have been scheduled for production (Figure 1).

A critical first step is for each sector's leadership team to develop a plan describing what will be produced as one or more 'technical inputs' to the NCADAC by March of 2012. These inputs will support the first draft of the 2013 report that is due in June of 2012 (see Appendix B, Request for Information, for guidance on components of this proposal). The

plan will be collaboratively revised with the Sectoral Working Group (SWG) that will coordinate all of the sectoral chapters of the 2013 report. The NCADAC strongly encourages many types of technical inputs that will ultimately inform topical reports, which then become components of the 2013 report and subsequent additional products (Figure 2).

Technical reports can be from a wide range of sources including literature reviews, discussion papers, case studies, workshop summaries, or modeling results and interpretation of data, but must meet the assessment requirements for documentation of sources. As much as possible, sectoral leadership teams should coordinate efforts with other teams associated with their sector that have expressed interest in contributing technical inputs via the Request for Information process described in Appendix B.

Critical steps include:

- a. Building a leadership team based on existing sectoral knowledge and capacity and potential “conveners” to plan ongoing activities and the sectoral expression of the NCA network. Members of the NCADAC will be invited to participate on writing teams related to sectors that are of interest to them.
- b. Identifying human capital and other resources to support assessment activities. Fostering ongoing capacity for assessment in the sectors and cross-sectoral activities requires engaging entities that are already involved in climate and global change issues, and who have the capacity to support the NCA process and to expand the network of participants (See Appendix B). Based on any ‘Expressions of Interest’ that are received as part of the Request for Information, engage new entities in the process.
- c. Identifying additional government, academic, NGO, and business partners who may have existing “climate assets” – e.g., regional vulnerability assessments, impact evaluations, adaptation strategies, and climate projections/scenarios within each sector. Their products should be considered for inclusion in the Assessment and should be inventoried, evaluated and inter-compared as appropriate.

This leads to the following set of priorities for the NCA sectoral activities:

- Initially focus on activities that will serve to inform the 2013 report.
- Each NCADAC sectoral team should identify clear goals, timelines, and assignments for their approach to the 2013 report as soon as possible, to be submitted in the form of a simple prospectus (leadership, approach, milestones, timeline, etc.) no later than September 1, 2011.

## **Progress towards the 2013 report**

The Sectoral Working Group will identify leadership for each of the sectoral and cross-sectoral teams. The teams will function as “franchises” and will be co-led by a member of the NCADAC and someone who is knowledgeable on climate assessment issues but who is not a member of the NCADAC. The team leadership will be approved by the NCADAC Sectoral Working Group.

The sectoral or cross-sectoral team will work with these leaders to establish the team, ensuring that a broad range of knowledge and expertise is included. The teams will provide to the NCADAC a simple prospectus that explains the team’s approach, timelines, and milestones.

The NCADAC also is encouraging technical input from individuals and groups who are not part of the sectoral or cross-sectoral teams. These interested parties or external teams for each sector must submit an Expression of Interest as described in the Request for Information (see Appendix B). Products prepared by the interested party for submission to the NCADAC should meet the requirements of the Request for Information.

Information produced as a technical input to the NCADAC by March 1 of 2012 will be considered for inclusion in the first draft of the 2013 report, due in June 2012 (see the attached Request for Information for guidance on components of this proposal). The NCADAC plan is to use the 2009 Assessment report as the base from which to highlight new knowledge and activities in the region since 2009. In addition, the NCADAC proposes to implement an adaptive risk/vulnerability framework for 2013, and to start to plan topical reports from the regions and sectors on issues of current interest that illustrate integrated and innovative approaches to climate issues. Subsequent topical reports could feed into the ongoing future NCA process at any point in time to best align with sectoral capacity and interest. The NCADAC, working with the Federal agencies, will provide a specific plan for each sector and cross-cutting topic.

## **Minimum Requirements for 2013 Report Technical Inputs for Sectors and Cross-Cutting Topics**

- 1) Identify key issues/vulnerabilities for the sector or cross-cutting topic and the utility and availability of relevant data;
- 2) Update the 2009 GCCI Report for the sector (if applicable), using materials that meet the NCADAC standards for review;

- 3) Identify and engage local networks of participants and resources that can be brought to bear on the assessment topics
- 4) If appropriate to the sector or cross-sectoral topic, evaluate and respond to the regional climatologies and projections provided by the NCA (e.g. consider relevance and utility for sectoral considerations) in addition to existing, credible impacts reports and vulnerability assessments for facilitated discussion of indicators, needs, and scenario planning discussions.
- 5) Discuss potential indicators of change for the sector in the context of building a suite of National Indicators
- 6) Identify important information needs and priority topics for subsequent assessment activities
- 7) To the extent possible, use an integrated, risk-based framework that includes consideration of cross-regional, cross-sectoral and international stressors.

Optional additional efforts:

- 1) Conduct facilitated scenario planning discussions;
- 2) Provide initial inventory and/or assessment of key sectoral adaptation and mitigation efforts to identify important information needs and to report on development of sectoral or topical engagement networks.
- 3) Identify next steps in facilitating sectoral adaptation and mitigation efforts

## **Workshops**

Each Sectoral Team, working with the Federal agencies and other interested parties, will organize at least one engagement activity in 2011 (a workshop, webinar, or session at a meeting) with the intent of determining the extent that the sectoral or cross-cutting topic can respond to the “minimum” NCA sectoral requirements and to plan their assessment activities beyond that report towards the next one.

Components of sectoral or cross-cutting conversations (including preparatory work prior to a workshop) could include:

- a. Providing a context for the conversation (e.g., what is the NCA and why does it matter?)
- b. Community-building and engagement efforts (who is here and why? Who is missing and should be here?)
- c. Assessing capacity, interest and resources available for the assessing the climate impacts on the sector as well as mitigation and adaptation activities related to the sector (and discuss additional topics if there are strong feelings on this subject)
- d. Identifying and prioritizing climate-related issues of concern for the sector (e.g., infrastructure vulnerability for transportation)



- e. To the extent possible, discussing an approach to inventorying climate response activities related to the sector or cross-cutting topic, with the long term intent to start documenting effectiveness of alternative approaches as well as costs and benefits of adaptation and mitigation activities related to the sector
- f. Discussing possible NCA indicators of interest to sector participants (suggested to be included in the National Indicators Strategy)
- g. Identify additional sources of local data to be considered through a participatory process, eliciting reactions to other studies (regional, sectoral, process, or technical)
- h. Planning sectoral capacity building for the NCA ongoing process
- i. Identifying climate information needs for local decision makers and training priorities to help build assessment capacity related to the sector
- j. Identifying potential individuals and entities willing to be responsible for portions of the assessment activities in the 2013 report and in the longer term

Workshop outcomes and other products and outcomes related to the sectors or cross-cutting topics should be documented in a brief report that can be shared with the NCADAC and the Assessment staff. Any technical inputs, documents, data and reports for use in the 2013 NCA report need to be submitted for consideration by the NCADAC by March 1, 2012. During the subsequent report writing and review period, teams providing technical inputs will be asked to respond to additional information needs from the NCADAC as it prepares the draft and final versions of the 2013 report. The report-writing working groups of the NCADAC will coordinate, via the NCA office and NCADAC members, with groups providing technical inputs to ensure the inputs are responsive to the NCA needs.

## **Coordination with other NCA activities**

With the envisioned distributed process for the NCA, it will be critical to coordinate the activities taking place in the sectors with activities related to regions. The role of the NCA office and the Interagency National Climate Assessment Task Force (INCATF) will be to support this coordination and to provide requisite assistance to the Sectoral Working Group and each Sector Team. The NCA office will:

- Circulate the Request for Information (Appendix B) to encourage non-federal groups to participate in the NCA process, maintain a database of the Expressions of Interest (EOI) that are returned from interested parties, and communicate with them to encourage engagement in the process. Once EOIs and resulting inputs are received, the office will ensure these documents are appropriately distributed to the SWG and other relevant NCADAC working groups.
- Monitor sectoral assessment activities to promote consistency, transparency, good documentation of activities, and clear communications to the extent possible.

The NCA does not function alone, but is a component of the USGCRP and hence receives critical resources and support from its agencies. Guidance is also provided by the U.S. Global Change Research Program (USGCRP) Principals, especially via the INCATF, which is comprised of key program representatives from the agencies. The INCATF also provides coordinated agency advice and counsel to ensure consistency with agency missions, and enable and align the provision of technical support and inputs to the NCADAC, including assessment workshops.

Much of the context for this strategy arose from the outcomes of a NCA workshop concerning regional and sectoral assessments that was held November 15-17, 2010. The full report [http://www.globalchange.gov/images/NCA/regional-sectoral-report\\_final.pdf](http://www.globalchange.gov/images/NCA/regional-sectoral-report_final.pdf) summarizes inputs from 140 participants.

### **For Further Information:**

Any questions about the content of this strategy document or the NCA regional assessments should be sent to Ralph Cantral, NCA Sectoral Coordinator, US Global Change Research Program Office, 1717 Pennsylvania Ave. NW, Suite 250, Washington, DC 20006, Telephone (202) 419-3497, email: [rcantral@usgcrp.gov](mailto:rcantral@usgcrp.gov).

For more information about the NCA process, including the updates to documents, reports, newsletters, calendar of events, and information concerning the NCADAC, please visit <http://assessment.globalchange.gov>.

Specific questions about the expectations of the NCADAC Sectoral Working Group should be directed (please use "NCADAC SWG" in the subject line) to its co-chairs, Jim Buizer at [Buizer@asu.edu](mailto:Buizer@asu.edu) and Mary Gade at [mary.gade@yahoo.com](mailto:mary.gade@yahoo.com).